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STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

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STRYCHNINE, THE MOST IMPORTANT CAUSE OF FATAL ACCIDENTAL POISONING AMONG CHILDREN ONE TO FOUR YEARS OF AGE.

Young children are the most frequent victims of accidental poisoning. In 1924, there were recorded 70 deaths among children one to four years of age insured in the Industrial Department of the Metropolitan Life Insurance Company from such accidents.

Definite information regarding the type of poisonous compound was reported in 57 of these 70 instances. No less than 14 different types of poisons were ingested by these children. Strychnine compounds accounted for 24 deaths. This was followed in order of numerical importance by lye and other alkalies with six deaths; fireworks, five deaths; exterminators, largely arsenic, five deaths; and petroleum oils (kerosene and gasoline), three deaths. Other compounds represented were lysol, cresol, carbolic acid, methyl salicylate, furniture and brass polish, arsenic compounds, acids, ammonia, and potassium silver cyanide.

It is truly astonishing to find so many deaths from strychnine poisoning, indicating that this cause, though perhaps not the commonest type of poisoning found among children, is certainly the most important from the standpoint of fatality. From the information available regarding these deaths, it appears that cathartic pills, containing strychnine and left within the reach of children, were one of the most important sources of poisoning. There were seven deaths of this type reported. The only other important compound mentioned was tonics, from which there were three deaths reported. Whether the tonics were given to the children or were taken accidentally is not indicated. In the other instances no mention is made of the types of the compounds but it may well be presumed that they would fall largely in two classes: tonics and cathartics. Analysis of the deaths by geographical location shows that all

sections of the United States and Canada are represented, including urban and rural districts.

There is every reason to believe from this evidence that the dangers of strychnine compounds are not generally appreciated. Their deadly character should be made known to all parents. More effective measures should be taken to call attention to the danger by placing more striking labels and warning signs on the containers for drugs containing strychnine. These figures are so significant as to warrant investigation by health officers into conditions in their localities. Possibly such highly poisonous drugs should be procurable only on a physician's prescription.

THE MORTALITY EXPERIENCE OF THE FIRST QUARTER OF 1925.

Health conditions among the industrial populations of the United States and Canada were never so favorable during the first quarter of any year as they have been during that period of 1925. This is clearly indicated by the deathrate among the more than sixteen million Industrial policyholders of the Metropolitan Life Insurance Company which was 9.9 per 1,000 during this period.*

The improvement in 1925 as compared with the winter months of 1924 is confined, however, to the white policyholders. Among the colored, the mortality exceeded slightly the figure for last year.

The factors chiefly instrumental in establishing this splendid record are shown clearly on page 4. The most important item is the further decline in the tuberculosis rate among both the white and colored policyholders. The figures for these Industrial policyholders are rapidly approaching those for the general population, which, only fourteen years ago, were only about half as high. The four principal communicable diseases of childhood likewise showed marked improvement without a single exception. Diphtheria (which causes almost as many deaths as the other three combined) dropped 31 per cent. in its rate as compared with last year. Deaths from measles totalled less than one-quarter of the record for the early months of 1924. Scarlet fever and whooping cough registered substantial declines.

Other diseases for which the record is better are cancer, cerebral hemorrhage, pneumonia, puerperal conditions and accidents.

There are, nevertheless, a few causes which show higher deathrates than during the winter of 1924. The mortality from heart

*It is true that a slightly lower deathrate was recorded during the first quarter of 1921, but at that time no infants were insured by the Company. On the only comparable basis, that of deaths of persons aged one year and over, the record this year surpasses that of the first quarter of 1921.

disease has registered an increase among both the white and colored; chronic nephritis has run slightly higher among the whites, with a considerable increase among the colored. Deaths from influenza have been much more frequent this year than last. This does not mean that the situation was in any way serious. The disease did not prevail, by and large, in virulent form. The deathrate was less than one-half that for the corresponding quarter of 1923 and much lower than in 1922. Suicides have been more frequent this year than last, and more homicides have occurred among the white policyholders.

The diabetes situation is not as favorable as it was a few months ago. In the first part of 1924 there was recorded a marked drop in the diabetes deathrate coincident with the more general use of insulin. This drop followed a period in which the mortality from that disease had been showing a rising tendency. Beginning with July, 1924, however, we began to register higher deathrates than were recorded during the corresponding months of 1923. This has continued during most of the succeeding months. During the first quarter of 1925 there was recorded a slight increase in the diabetes deathrate among whites, and a considerable one among the colored, as compared with last year. It is yet too early to determine just what this reversal in the diabetes deathrate means. It may possibly be that later developments will show that the benefits of the insulin treatment are temporary—or at least not as lasting as had been expected in the earlier periods of its use.

There were 121 deaths recorded from alcoholism during January, February and March, with a deathrate of 3.0 per 100,000. This may be compared with 111 deaths during the first quarter of last year, with a rate of 2.9. There were 278 deaths from cirrhosis of the liver, which is closely associated with alcoholism, as compared with 241 during the same period of 1924, the corresponding rates being 6.9 for the first quarter of 1925, and 6.4 for 1924. Deaths from wood and denatured alcohol poisoning numbered five, as compared with four for the same period of last year, and with twelve in the first three months of 1923.

Since January 1, 1922, 1,293 deaths have been recorded from alcoholism, of which 1,280 occurred in the United States and only 13 in Canada.

While fatal automobile accidents were not quite so numerous as during the first quarter of last year, the deathrate from this cause, which had been running exceptionally low in January and February, rose sharply in March.

The table below presents the deathrates among white and colored policyholders, respectively, for the first quarters of 1925, 1924 and 1923.

Deathrates per 100,000 Persons Exposed. First Quarters of 1923, 1924 and 1925 Compared by Color for Principal Causes of Death. Industrial Department, Metropolitan Life Insurance Company. Premium Paying Business

Cause of Death	Death rates per 100,000 persons exposed					
	White			Colored		
	Jan.-Mar. '25	Jan.-Mar. '24	Jan.-Mar. '23	Jan.-Mar. '25	Jan.-Mar. '24	Jan.-Mar. '23
All Causes of Death	908.3	929.2	1041.7	1632.7	1593.9	1656.9
Typhoid fever	2.8	2.4	2.9	5.7	4.2	6.3
Measles	3.0	14.1	11.7	1.3	5.8	7.8
Scarlet fever	5.9	6.8	6.8	.8	.4	.7
Whooping cough	6.1	7.4	5.8	10.9	11.6	8.2
Diphtheria and croup	14.1	20.6	23.8	5.9	6.2	8.2
Influenza	32.4	21.8	71.8	76.8	60.6	135.6
Meningococcus meningitis	.8	.9	.7	1.0	1.6	1.0
Tuberculosis—all forms	88.5	94.2	106.3	231.8	248.0	245.6
Tuberculosis of respiratory syst.	78.0	84.1	98.3	207.0	227.8	227.0
Tuberculosis of the meninges, etc	4.9	5.6	3.7	7.3	6.9	5.8
Other forms of tuberculosis	5.6	4.5	4.3	17.4	13.4	12.8
Cancer	70.9	71.2	72.7	70.9	77.3	67.6
Diabetes	17.8	17.0	22.0	19.3	14.3	17.0
Cerebral hemorrhage; apoplexy	55.3	63.3	70.2	99.2	106.3	109.0
Organic diseases of the heart	132.9	126.8	153.8	236.4	213.1	233.0
Total respiratory diseases	133.5	136.0	154.9	266.6	265.2	267.2
Bronchitis	6.9	6.7	8.8	10.9	8.9	11.9
Bronchopneumonia	50.9	56.6	48.5	80.1	88.3	62.3
Pneumonia—lobar and undefined	66.8	63.2	86.5	157.7	155.3	178.3
Other dis. of respiratory syst.	8.9	9.6	11.2	17.8	12.7	14.8
Diarrhea and enteritis	17.2	19.5	5.7	23.7	15.2	8.0
Under 2 years	14.3	16.3	2.5	16.6	9.6	1.2
2 years and over	2.9	3.2	3.3	7.1	5.6	6.8
Acute nephritis	5.0	5.4	5.7	16.2	16.9	14.5
Chronic nephritis	69.1	68.0	77.4	131.9	118.3	120.9
Total puerperal state	16.8	17.8	20.1	26.6	29.6	22.3
Puerperal septicemia	6.5	7.1	7.4	12.0	12.0	8.0
Puerperal albuminuria and convulsions	3.4	4.1	4.3	4.4	7.8	6.1
Other dis. of puerperal state	6.9	6.5	8.3	10.3	9.8	8.2
Total external causes	65.2	65.5	64.2	104.0	107.9	102.9
Suicides	7.3	6.6	7.6	4.2	3.6	4.4
Homicides	3.2	2.5	3.2	31.9	33.4	29.6
Accidental and unspecified violence	54.6	56.3	53.4	68.0	70.9	69.0
Accidental drowning	1.6	3.3	2.3	2.1	2.2	1.2
Automobile accidents	11.7	11.8	10.2	9.0	9.6	10.2
All other and ill-defined causes of death	171.1	170.5	165.3	303.7	291.3	281.0

FEWER DEATHS FROM TUBERCULOSIS AND MORE DEATHS FROM CANCER.

The declining deathrates from tuberculosis and other preventable diseases imply that year after year more lives are transferred to middle and later life, there to be subjected to the increasing death-rates from cancer and other causes characteristic of this age division of life. This is shown most strikingly when calculations of mortality are made on a so-called life table basis, that is to say, the deaths from tuberculosis and cancer are separately tabulated as they occur in the successive ages of a generation or cohort of persons starting out at, say, age ten years and continuing under observation until the last life has passed away. A table of this sort was made for tuberculosis and cancer above ten years of age among males and females in the United States Registration Area for 1910 and 1922.*

The chart on page 7 gives a comparison, by age, of the deaths thus computed. For tuberculosis among males a most radical change in the age contour of deaths occurred between 1910 and 1922. From the graph for males it appears that the top of a mountain of deaths has been sharply cut off. Instead of the 1910 peak in adult and middle life, one finds in 1922 a tendency toward a straight line from about age 22 to age 67. Cancer, on the other hand, shows a marked accentuation in the peak of mortality at and around age 67. Taking the whole after-lifetime of 100,000 males in a life-table population above age 10, there were 10,356 tuberculosis deaths in 1910 and only 6,840 in 1922, a reduction of 34 per cent. Cancer deaths increased, however, from 5,874 in 1910 to 8,370 in 1922, or 42.5 per cent. But this figure, it must be understood, is not in any way a measure of the increase in the deathrate from cancer in the period.

The female population above age ten showed a decrease from 8,535 to 6,060 tuberculosis deaths, or 29.0 per cent., between 1910 and 1922; cancer increased from 9,850 to 11,320 deaths, or 14.9 per cent. in this period. These facts are shown in the table on page 6.

Even in 1910, cancer among females was more of a menace to life than tuberculosis (9,850 deaths as compared with 8,535 in a population above ten years of age). In the intervening period, tuberculosis and other diseases declined so fast among males, and cancer increased at such a rate, that in 1922, tuberculosis recorded nearly 1,500 fewer deaths than did cancer! In the more recent year, cancer was 22 per cent. more frequent as a cause of death among males than tuberculosis! For females above ten years of age in 1922 the cancer burden of that generation of lives was more than 88 per cent. greater than that for tuberculosis!

*United States Registration States for 1922.

Number of Deaths from Cancer and Tuberculosis in Life Table Populations at and Above Age 10. Males and Females, United States Registration Area, 1910 and 1922.

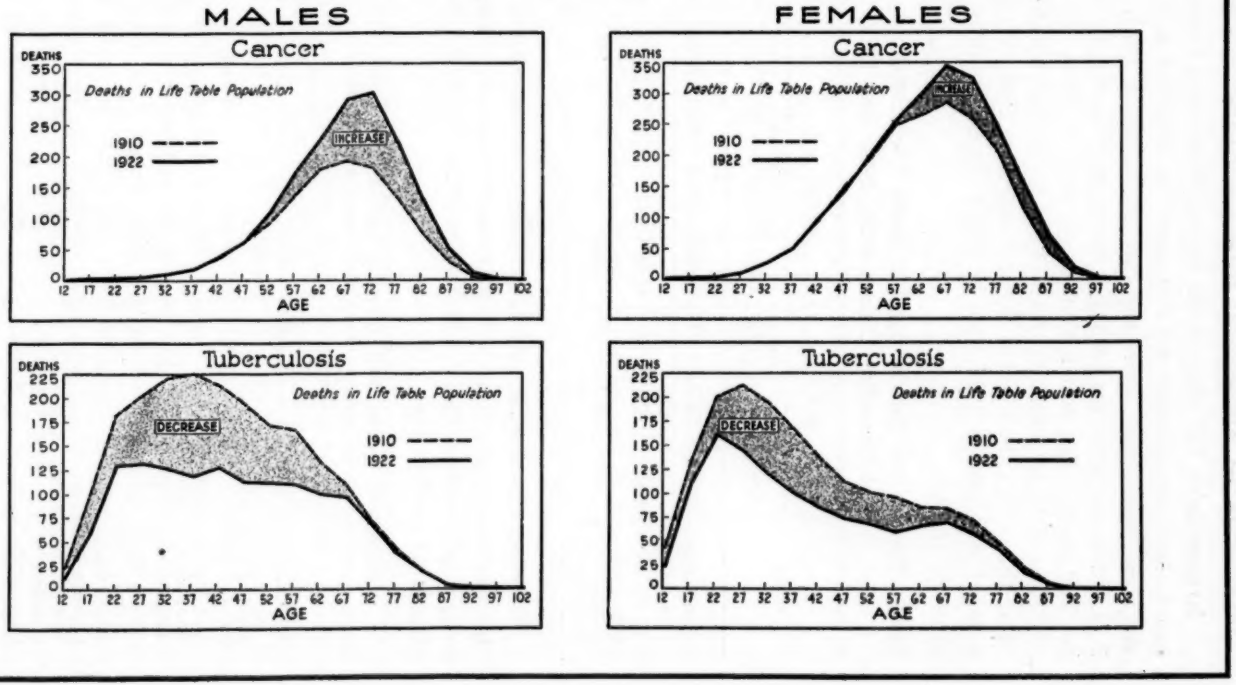
Cause of Death	MALES				FEMALES				Age of Maximum Deathrate (after 10)			
	Total life table deaths in group of 100,000 starting together at age 10.		Increase (+) or decrease (—) 1910-1922		Total life table deaths in group of 100,000 starting together at age 10.		Increase (+) or decrease (—) 1910-1922		Males		Females	
	1922	1910	Actual	Per cent.	1922	1910	Actual	Per cent.	1922	1910	1922	1910
Cancer.....	8,370	5,874	+2,496	+42.5	11,320	9,850	+1,470	+14.9	71	67	67	67
Tuberculosis.....	6,840	10,356	—3,516	—34.0	6,060	8,535	—2,475	—29.0	*	36	22	26

*No well-defined maximum.

If tuberculosis and other causes of death continue to decline, and the increasing cancer deathrate acts upon an ever larger population in the middle and later ages, we shall face the harrowing prospect of an even heavier cancer toll in future, and not very remote, generations.

In heeding the plea for greater support to the cancer prevention movement the public ought to bear the foregoing facts in mind. Every possible clue to the nature of malignant growths, every hopeful effort for the early detection and prompt treatment of the disease, ought to be followed by extensive, thoroughgoing research and demonstration. The increase of cancer deaths in successive generations, even though these deaths occur, largely, among the aged, means anything but the merciful, painless passing away of the senile. It means an enormous loss of often valuable lives in the middle ages also, and in any case, after great suffering. The prevention of this suffering and these premature deaths is one of the tasks of the newer public health movement.

Cancer and Tuberculosis Deaths in a Life Table Population.
United States Registration Area, 1910 and 1922



SMALLPOX IN AMERICAN AND CANADIAN CITIES, 1924.

Returns from 715 cities in the United States and Canada show a case-fatality rate (deaths per 100 cases) for smallpox in 1924, which was more than three times the rate prevailing in 1923. In 1924, 2.27 deaths occurred for each 100 cases; in 1923, the figure was .67 per 100 cases. The actual number of cases in these 715 cities was 25,712 in 1924, as compared with 11,685 in 1923 and 10,823 in 1922. More than twice the number of cases and more than seven times the number of deaths in 1924 than in 1923! In the following table we show the facts.

Cases, Deaths and Deaths per 100 Cases from Smallpox, American and Canadian Cities, 1924, 1923 and 1922.

AREA	1924			1923			1922		
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
U.S. and Canada (715 cities)	25,712	584	2.27	11,685	78	.67	10,823	487	4.50
U. S. (628 cities)	24,689	561	2.27	11,096	75	.68	10,310	486	4.71
Canada (87 cities)	1,023	23	2.25	589	3	.51	513	1	.19

In 1922, the case-fatality rate (deaths per 100 cases) was 4.50. This was due largely to the severity of the Denver epidemic in that year, which caused 248 deaths! The 1924 experience for certain cities is set forth below:

Smallpox Cases and Deaths in Certain Cities, 1924.

CITY	CASES	DEATHS	DEATHS PER 100 CASES
Birmingham, Ala	1,113	1	.09
Fresno, Calif	102	11	10.78
Los Angeles, Calif	3,461	12	.35
Long Beach, Calif	643	—	—
Atlanta, Ga	1,595	6	.38
Indianapolis, Ind	1,014	—	—
Detroit, Mich	1,610	163	10.12
Flint, Mich	162	7	4.32
Duluth, Minn	228	13	5.70
Minneapolis, Minn	993	221	22.26
Camden, N. J	47	19	40.43
Cleveland, O	99	6	6.06
Toledo, O	539	31	5.75
Pittsburgh, Pa	107	24	22.43
Knoxville, Tenn	625	2	.32
Windsor, Ont	59	15	25.42

These more important single instances are widely scattered over the country. Smallpox last year broke out in areas where only the health officers knew or suspected the real state of affairs with respect to protection against the disease. As very often happens, communities are told many times over by their health officers of the need for protection against the world-wide menace of smallpox, but nothing is done by the people until a grave situation arises. Even then there is organized opposition to the efforts of the health authorities to stamp out the disease.

Perhaps the only step that can be taken at the present time is to inform the public, to urge vaccination, and to let the "opposition" take the consequences. Often, this is the only attitude that hard-pressed health officials can assume. When smallpox paralyzes business and social activities in a city, disfigures thousands and kills hundreds, many persons may be led through fear rather than through reason to protect themselves!

HEALTH RECORD FOR MARCH, 1925.

The March deathrate of 10.3 per 1,000 is the lowest figure ever recorded for that month among Metropolitan Industrial policyholders. It may be compared with 10.5 per 1,000 in March 1924 and with 12.2, 12.3 and 10.7 in 1923, 1922 and 1921 respectively. A slight seasonal rise over the February deathrate was recorded.

Reductions in the mortality for several of the most important causes of death were the chief factors in bringing about the excellent health record for the month. These same factors have been operative, also, in reducing, to a new minimum, the deathrate for the first quarter of the year. They are discussed on page 2.

There is only one outstandingly bad item in the March mortality record—the figure for automobile fatalities. The deathrate jumped from 8.1 per 100,000 in February to 14.0 in March. This is an increase of 57 per cent. over the rate for March 1924 (8.9). Automobile fatalities were fewer in January and February of this year than in the corresponding months of 1924. We noted, however, in the February and March numbers of the Bulletin that weather conditions early in 1925 were, by and large, unfavorable to motor vehicle operation, and that the relatively low deathrates for those months might be due to this fact. Whatever may have caused the seemingly favorable figures for January and February, the tremendous rise recorded in March has brought the cumulative rate for the year up to about the point recorded at this time last year. There is no encouragement in the 1925 automobile fatality record to date.

The general deathrate for the large cities of the United States in March was 14.8 per 1,000, which was higher than for the previous month (14.4) and slightly above the figure for March 1924 (14.6). As compared with February, 1925, there was increased prevalence of influenza, malaria, measles, scarlet fever and whooping cough, with fewer cases of diphtheria, smallpox and typhoid fever. Compared with March a year ago, influenza, malaria, typhoid fever, poliomyelitis and whooping cough cases increased, but there was less diphtheria, measles, scarlet fever and smallpox.

More or less severe outbreaks of influenza were reported from New England, the Middle West and the Pacific Coast. In New Hampshire conditions were quite serious. In many of the factories and mills of Manchester, approximately 10 per cent. of the employees were absentees as the result of the epidemic. There was exceptionally high morbidity in Southeastern Connecticut. Columbus, Ohio, reported the most serious influenza situation since the epidemic of 1918. Other more or less serious outbreaks were reported from Fulton and Callaway Counties, Missouri; Glasgow, Kentucky; Milwaukee; and among the Indians of Northern Manitoba.

Connecticut and North Carolina were the outstanding examples of increasing prevalence of measles. Scarlet fever outbreaks were reported from York, Pennsylvania; Rockville, Maryland; LeRoy, New York; Oil City, Pennsylvania; and the State Hospital for Mental Diseases at Providence, Rhode Island; also from Limerick, Saskatchewan; Bristol, New Brunswick, and Hamilton, Ontario.

While smallpox was less prevalent in March than in February, several outbreaks of the disease were reported, notably from Central Falls, Rhode Island; Magnetic Springs, Ohio; from a section of Philadelphia; and from St. Paul, Minnesota; and Milwaukee. In the last named city, one department store vaccinated all its employees and an industrial plant with 2,000 hands established a vaccination clinic.

Among the more important health activities of the month, the following may be noted. The State Commissioner of Health of Illinois announced that correspondence courses of instruction for prospective mothers had been arranged for. This is a part of a program, also including instruction in infant and child hygiene, in which the State Medical Society, the State Federation of Women's Clubs and other organizations are cooperating. The Los Angeles Child Guidance Clinic was recently established, permanently, by the Division on Prevention of Delinquency of the National Committee for Mental Hygiene.

The table below displays the mortality among the Industrial policyholders for March 1925, February 1925, March 1924 and the year 1924.

METROPOLITAN LIFE INSURANCE COMPANY.

Deathrates* per 100,000 for Principal Causes, Premium-paying Business in Industrial Department. (Annual Basis.)

MONTHS OF FEBRUARY, 1925, MARCH, 1925, AND OF MARCH, 1924.

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*			
	Mar., 1925	Feb., 1925	Mar., 1924	Year 1924†
TOTAL—ALL CAUSES	1025.6	1007.6	1047.4	907.5
Typhoid fever	2.4	2.6	2.2	4.4
Measles	3.4	2.1	14.3	7.2
Scarlet fever	6.1	4.2	4.9	4.4
Whooping cough	6.9	6.9	9.3	7.4
Diphtheria	11.5	11.6	15.7	13.2
Influenza	47.7	32.7	30.5	16.0
Tuberculosis (all forms)	113.4	103.2	115.2	104.5
Tuberculosis of resp'y system	99.3	92.1	104.0	92.6
Cancer	69.9	70.7	70.3	70.4
Diabetes mellitus	17.9	16.7	17.0	14.9
Cerebral hemorrhage	58.3	61.2	69.5	60.2
Organic diseases of heart	146.1	145.3	139.6	123.7
Pneumonia (all forms)	140.4	137.1	154.5	88.8
Other respiratory diseases	18.7	17.8	16.8	13.9
Diarrhea and enteritis	16.9	19.0	18.4	32.2
Bright's disease (chronic nephritis)	76.8	83.0	77.2	65.5
Puerperal state	19.2	18.4	17.5	16.8
Suicides	7.7	7.2	6.4	7.2
Homicides	6.5	6.0	6.4	7.1
Other external causes (excluding suicides and homicides)	52.5	55.3	51.6	62.7
Traumatism by automobile	14.0	8.1	8.9	15.7
All other causes	203.3	207.0	210.1	187.0

*All figures include infants insured under one year of age.
†Based on provisional estimate of lives exposed to risk in 1924.

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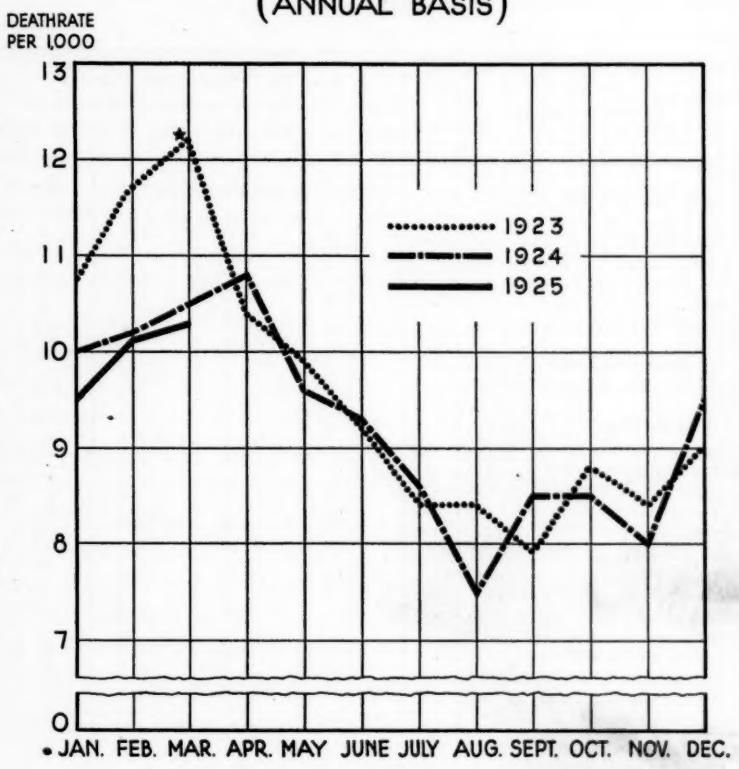
DEATHRATE PER 1000 *in* SPECIFIED MONTHS *of* 1923, 1924, 1925

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT

(ANNUAL BASIS)



	1923	1924	1925		1923	1924	1925
JAN.	10.7	10.0	9.5	JULY	8.4	8.6	
FEB.	11.7	10.2	10.1	AUG.	8.4	7.5	
MAR.	12.2	10.5	10.3	SEPT.	7.9	8.5	
APR.	10.4	10.8		OCT.	8.8	8.5	
MAY	9.9	9.6		NOV.	8.4	8.0	
JUNE	9.2	9.3		DEC.	9.0	9.5	

★ *Beginning with March, 1923, figures include mortality of infants under one year of age.*

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